

CLAIMS

What is claimed is:

1 1. A method for managing a communications session with a device, the method
2 comprising the computer-implemented steps of:
3 establishing, with the device, a communications session that supports a first quality of
4 service level;
5 receiving a request for a service associated with the device;
6 determining, based upon the request for the service and policy criteria, a second
7 quality of service level to be supported by the communications session for the
8 device; and
9 modifying the communications session by causing a layer-2 change in a
10 communications link used for the communications session, so that the
11 communications session for the device supports the second quality of service
12 level.

1 2. The method as recited in Claim 1, wherein:
2 the request for the service is received from a layer-2 gateway; and
3 causing a layer-2 change in a communications link used for the communications
4 session, so that the communications session for the device supports the second
5 quality of service level includes signaling the layer-2 gateway to change the
6 communications session with the device to support the second quality of
7 service level.

1 3. The method as recited in Claim 1, wherein causing a layer-2 change in a
2 communications link used for the communications session, so that the

3 communications session for the device supports the second quality of service level,
4 includes causing the modification of session context data at a layer-2 gateway.

1 4. The method as recited in Claim 1, wherein causing a layer-2 change in a
2 communications link used for the communications session, so that the
3 communications session for the device supports the second quality of service level,
4 includes generating and sending to a layer-2 gateway an AAA Change of
5 Authorization (CoA) Request command that specifies a quality of service profile for
6 the second quality of service level.

1 5. The method as recited in Claim 1, wherein the first and second quality of service
2 levels each specifies an amount of bandwidth to be allocated to the device.

1 6. The method as recited in Claim 1, wherein the device is a wireless device.

1 7. The method as recited in Claim 1, further comprising the computer-implemented
2 steps of:
3 receiving, from a first application server, first quality of service data that specifies the
4 second quality of service level;
5 receiving, from a second application server, second quality of service data that
6 specifies a third quality of service level; and
7 modifying, based upon the first quality of service data and the second quality of
8 service data, the communications session by causing a layer-2 change in a
9 communications link used for the communications session, so that the
10 communications session for the device supports a quality of service level
11 other than the first quality of service level.

1 8. An apparatus for managing a communications session with a device, the apparatus
2 being configured to:
3 establish, with the device, a communications session that supports a first quality of
4 service level;
5 receive a request for a service associated with the device;
6 determine, based upon the request for the service and policy criteria, a second quality
7 of service level to be supported by the communications session for the device;
8 and
9 modify the communications session by causing a layer-2 change in a communications
10 link used for the communications session, so that the communications session
11 for the device supports the second quality of service level.

1 9. The apparatus as recited in Claim 8, wherein:
2 the request for the service is received from a layer-2 gateway; and
3 the apparatus is further configured to cause a layer-2 change in a communications
4 link used for the communications session, so that the communications session
5 for the device supports the second quality of service level by signaling the
6 layer-2 gateway to change the communications session with the device to
7 support the second quality of service level.

1 10. The apparatus as recited in Claim 8, wherein the apparatus is further configured to
2 cause the modification of session context data at a layer-2 gateway.

1 11. The apparatus as recited in Claim 8, wherein the apparatus is further configured to
2 generate and send to a layer-2 gateway a AAA Change of Authorization (CoA)

3 Request command that specifies a quality of service profile for the second quality of
4 service level.

1 12. The apparatus as recited in Claim 8, wherein the first and second quality of service
2 levels each specifies an amount of bandwidth to be allocated to the device.

1 13. The apparatus as recited in Claim 8, wherein the device is a wireless device.

1 14. The apparatus as recited in Claim 8, wherein the apparatus is further configured to:
2 receive, from a first application server, first quality of service data that specifies the
3 second quality of service level;
4 receive, from a second application server, second quality of service data that specifies
5 a third quality of service level; and
6 modify, based upon the first quality of service data and the second quality of service
7 data, the communications session by causing a layer-2 change in a
8 communications link used for the communications session, so that the
9 communications session for the device supports a quality of service level
10 other than the first quality of service level.

1 15. An apparatus for managing a communications session with a device, the apparatus
2 comprising:
3 means for establishing, with the device, a communications session that supports a first
4 quality of service level;
5 means for receiving a request for a service associated with the device;
6 means for determining, based upon the request for the service and policy criteria, a
7 second quality of service level to be supported by the communications session
8 for the device; and

9 means for modifying the communications session by causing a layer-2 change in a
10 communications link used for the communications session, so that the
11 communications session for the device supports the second quality of service
12 level.

1 16. The apparatus as recited in Claim 15, wherein:
2 the request for the service is received from a layer-2 gateway; and
3 the apparatus further comprises means for causing a layer-2 change in a
4 communications link used for the communications session, so that the
5 communications session for the device supports the second quality of service
6 level includes signaling the layer-2 gateway to change the communications
7 session with the device to support the second quality of service level.

1 17. The apparatus as recited in Claim 15, wherein the apparatus further comprises means
2 for causing the modification of session context data at a layer-2 gateway.

1 18. The apparatus as recited in Claim 15, wherein the apparatus further comprises means
2 for generating and sending to a layer-2 gateway a Change of Filters (CoA) Request
3 command that specifies a quality of service profile for the second quality of service
4 level.

1 19. The apparatus as recited in Claim 18, wherein the apparatus further comprises means
2 for specifying the quality of service profile for the second quality of service level
3 using a vendor-specific attribute containing the the 3rd Generation Partnership Project
4 3GPP-Negotiated-QoS attribute.

- 1 20. The apparatus as recited in Claim 15, wherein the first and second quality of service
2 levels each specifies an amount of bandwidth to be allocated to the device.
- 1 21. The apparatus as recited in Claim 15, wherein the device is a wireless device.
- 1 22. The apparatus as recited in Claim 15, further comprising means for:
2 receiving, from a first application server, first quality of service data that specifies the
3 second quality of service level;
4 receiving, from a second application server, second quality of service data that
5 specifies a third quality of service level; and
6 modifying, based upon the first quality of service data and the second quality of
7 service data, the communications session by causing a layer-2 change in a
8 communications link used for the communications session, so that the
9 communications session for the device supports a quality of service level
10 other than the first quality of service level.